Melvin Butte Forest Management Project

Silviculture Treatment Specifications and Implementation Guidelines

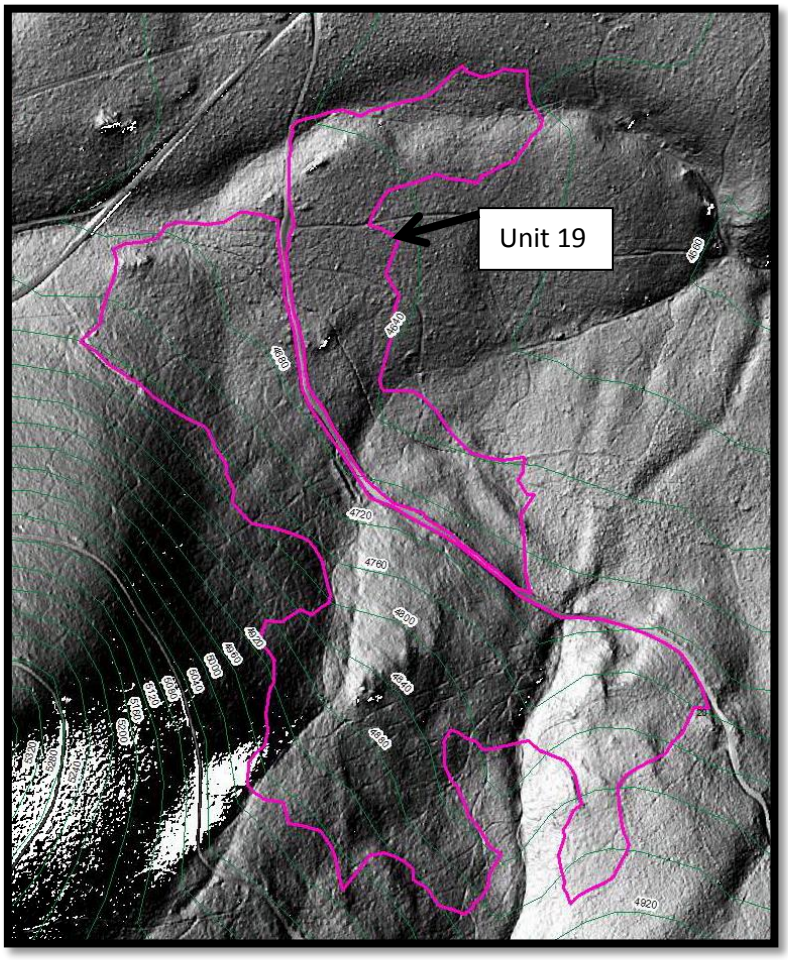
Setting ID (stands) 06010505380015455, 06010505380011776, 06010505380011777

EA Unit #30

Stewardship Imp Units 19

Fuels Imp # TBD

Updated- June 3, 2015



Management Allocations:

LRMP: Front Country Seen/Unseen MA 18

NWFP: Matrix

EA Treatment Name: Thinning

Secondary treatments: Underburn (prescribed), pile burning, mastication

Site Description:

Acres: 25

Aspect: Northeast to flat

Slope: 0-20%

Plant association- mixed conifer/snowbrush-manzanita CWS1-12 (Volland 1982).

All aged ponderosa pine dominated stand that had selective overstory ponderosa pine >40 years ago.

The numbers in table 1 (Lidar strength) does not provide species composition or level of dead/ dying. Ground reconnaissance indicated large species proportions differences and level of mistletoe between Unit 19 and 20.

Past management-

The stand had selective removal of large ponderosa pine (overstory removal-OSR) 40-60 years ago. This past selective OSR removed ~60-100ft² basal area per acre (BA/acre) of ponderosa pine. Fire suppression of natural and/or human ignitions has occurred from early in the 20th century.

Existing condition-

Conifer heights – range from 0-~150ft tall.

Diameters- range from 0-40”plus

Ages- range from 0-350yrs plus

Tree species- ponderosa pine, grand/white fir

Table 1-Stand statistics derived from Lidar determined tree points.

Stewardship Imp Unit #	Acres	Avg Diameter (inches)	STD Dev Diam (inches)	Quadratic Mean Diameter (inches)	BA/acres (0-4.9"dbh)	BA/acres (5-8.9"dbh)	BA/acres (9-20.9"dbh)	BA/acres (21+" dbh)	BA/acres tota	TPA (0-4.9"dbh)	TPA (5-8.9"dbh)	TPA (9-20.9"dbh)	TPA (21+" dbh)	Total Number of trees/acres	Plant Association Group (PAG)	Plant code	Current calculated SDI	SDI of trees >21"dbh
19	25	8.9	6.2	10.9	4	23	79	56	163	77	85	73	18	252	Mixed conifer dry	CWS1-12	289	73

The Unit 19 stand is a multi-aged and multi-story stand with at least 3 separate age classes. Ponderosa pine proportions in the stand indicate that grand/white fir encroachment in not a major concern at this time to future overstory replacement. However, the densities of mid- to understory pine indicate that any potential fire in the stand (under the appropriate conditions) would have ease of transfer to overstory pine and induce a stand replacement fire. In addition, the stand contains pockets of heavy to light dwarf mistletoe and past and current bark beetles attack. Currently there is approximately 10-15 tons of down wood per acre primarily from bark beetle induced mortality. The unit is currently well above the upper management zone and it is likely this that is a contributing factor to the beetle presence in the unit. Within the unit there is a remnant component of ponderosa pine that have old growth characteristics (Van Pelt 2008). These old growth pine are configured as single trees and in groups (clumps). They tend to big in size (>21inches) however there are scattered smaller old growth pine that are subordinate in clumps and on occasion as individuals. Under the current trajectory, the stand will continue to lose over- and midstory pine with replacement occurring with ponderosa and to a lesser degree white/grand fir. White fir to ponderosa pine proportion is around 20/80 and increases to 60/40 when considering smaller size classes.

Goals of marking

- Maintain fire climax ponderosa pine including old forest structure elements
- Create and retain trees in clumps or in a random distribution of stems.
- Alter fir/pine species proportions while maintaining adequate stocking for this plant association
- Remove where possible else isolate and confine dwarf mistletoe in the unit
- Retain healthy ponderosa pine saplings and poles where they exist

Unit 19 locations

The western and southern boundaries have light to heavy levels of dwarf mistletoe infection which may be in proximity to the adjacent plantations/ stands. Prevent mistletoe infections into plantations by inspecting boundary trees. Boundary trees that are >20.9”dbh are to be retained and may be pruned in a later step. Remove trees that have high mistletoe infections in the upper crowns and are <20.9”dbh. If all trees have high infections, retain those with infections in the lowest portion of the crowns or those with DMR <3.

Unit 19 Merchantable Material Marking guidelines- ≥9”dbh

ITM- blue paint

1) Retained basal areas should range across the unit from 40-140 sqftBA/ac (70 BA/ac average)
2) No marking of ponderosa pine trees >20.9”dbh
3) Retain all lodgepole pine
4) In the northeast portion of the unit there are a couple opportunities to maintain the upper end of the range in order to favor some larger clumps and arrangements of trees. Look for similar opportunities in at least 3 other locations.

5) The southeast corner (adjacent to plantations) was surveyed to have high DMR rated overstory pine. Mark all trees that have a >3 DMR rating (20.9"dbh limit).
6) Use the lower end of the basal area range to reduce high dwarf mistletoe infection areas.
7) Use crown form, health, vigor, and location as determining factors for leaving trees.
8) Remove all (except those that meet below) grand/white fir that is present. These are scattered within the unit.
9) Always choose cutting a fir over ponderosa pine in order to meet stocking.
10) Ponderosa pine thinning will be generally from below unless thinning is done to "isolate and confine" Thinning in these locations will be generally from below. Only choose a larger tree over a small one in order to create clumpy structure or reduce any dwarf mistletoe that may be present.
11) Identify and retain large trees, old tree clumps, large snags, and other ecologically important structural elements of the stand that should be preserved. Old trees are those at least 150 years old and can be identified by physical characteristics such as ponderosa pine with orange, plate bark, true fir with thick, furrowed bark, and all trees with complex forms, including broken or malformed tops and thick upper branches. Use the Van Pelt (2008) guidelines to assist with old tree identification or fir guide. Old trees do not necessarily have large diameters.
    a. While most of the fir in the stand have encroached into the stand be on the lookout for fir trees that are contemporaries to the old growth ponderosa pine. Physical appearances include deep bark furrows, high live branches and darker colored bark. These trees may be >150 years old and should be retained. Generally trees that are >28" dbh should be examined for age.
12) In areas that have old growth ponderosa pine trees that appear to be fading and dying (yellowing needles, little to no live crown) ignore the stocking contributions from these trees and allow for ponderosa pine replacement.

Sub Merchantable material

This material will have a DxD prescription with supplemental LTM marking

Designation by Description

- Retain all lodgepole.
- Remove all white fir not leave tree marked (orange).
- Cut all sub-merchantable ponderosa pine (trees 5-9"dbh) not designated "leave" by orange paint.
- Retain all old growth ponderosa pine (orange platy bark).

Supplemental LTM Marking- Guidance for marking

Tree Selection and Location

Due to potential mistletoe presence and potential for spread, "leave" and "take" trees from above (commercial trees) will be used to guide the determination of leave trees in the 5-9"dbh classes. Envision the commercial sized trees removed and then envision which trees will be retained. Selectively choose the under- mid-story ponderosa pine based on what would be retained/removed. For example, in areas that have a high proportion of commercial removal retain 5-9"dbh ponderosa pine at the upper end of the TPA range. In areas that have a high retention of large >21"dbh trees LTM to the lower end of the TPA range. Another important element is to consider the post-sale mistletoe work which will include pruning and/ or girdling of high DMR rated trees.

5-9"dbh size class- designated reserve trees- handled through supplemental marking

Retain between 5-40 TPA. Form and vigor take precedence over spacing. Currently there are about 89 TPA in this size class (all species). 5 TPA equals about a 90'x90'ft spacing while 40 TPA equals about a 32'x32'ft spacing.

Where possible retain all clean ponderosa pine in this size class up to the upper end of 40 TPA. Where infection levels are high (≥3 DMR)

It is desirable to strategically locate and identify these trees, if they occur as a small group choose the most disease free and largest possible.

0-5”dbh size class

Retain all ponderosa pine except those with high mistletoe infections. Retain 40-170 TPA (32ftx32ft- 16ftx16ft). Form and vigor take precedence over spacing with some areas absent of leave trees when highly diseased.

Post Sale Activities

Pruning roadside ponderosa pine

Prescribed fire

Planting ponderosa pine, Douglas-fir on 16*16ft spacing (with variation of distances).

/s/ William Brendecke- certified silviculturist- 6/3/2015

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